



6503773

1/3

THREADING  
DISLOCATION

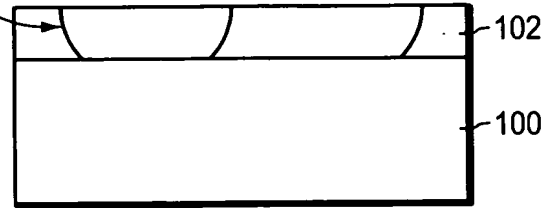


FIG. 1A

1. DEPOSIT LATTICE MISMATCHED  
LAYER AT LOW T

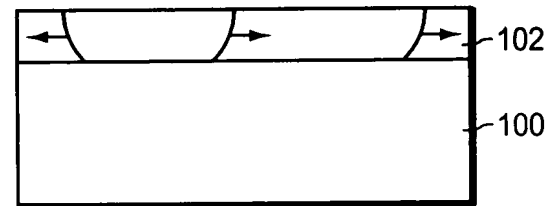


FIG. 1B

2. ANNEAL AT HIGH T TO INCREASE  
DISLOCATION FLOW AND REDUCE  
DISLOCATION DENSITY

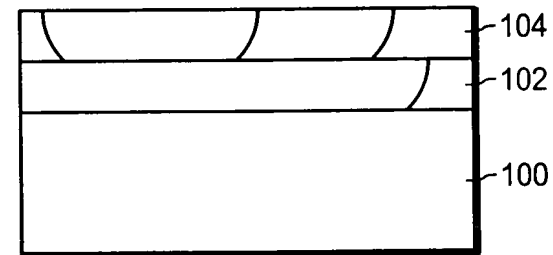


FIG. 1C

4. REPEAT ANNEAL AND  
DEPOSITION UNTIL DESIRED  
STRUCTURE IS ACHIEVED

3. DEPOSIT SUBSEQUENT LAYER  
WITH INCREASED LATTICE  
MISMATCH AT LOW T

+

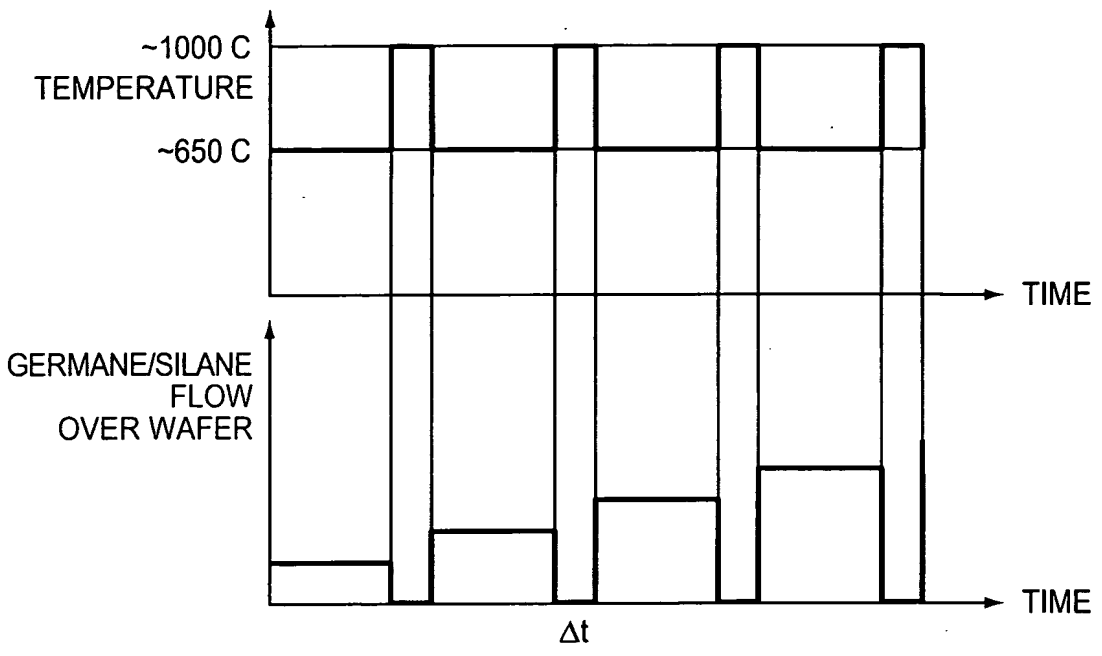
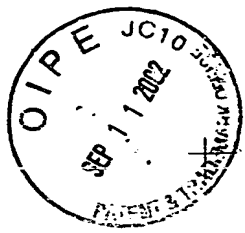


FIG. 2

GLIDE KINETICS SERIES (30% Ge):  
FIELD TDD VS. GROWTH T

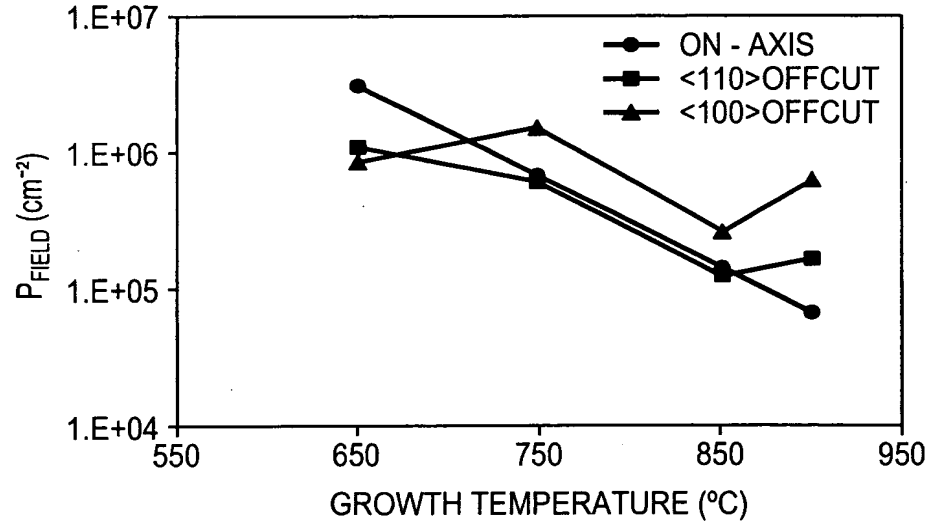


FIG. 3

+

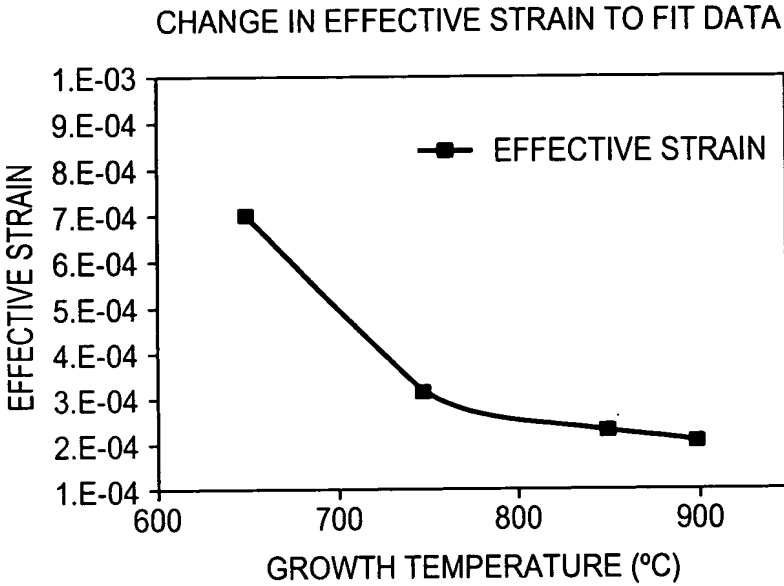
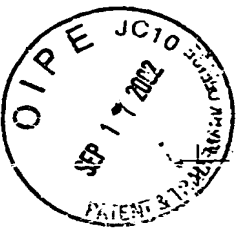


FIG. 4

SAMPLE	TOTAL THREADING DISLOCATION DENSITY (# / cm <sup>2</sup> )	FIELD THREADING DISLOCATION DENSITY (# / cm <sup>2</sup> )
20% SiGe ON Si WITH GRADED BUFFER AS GROWN	1.36 x 10 <sup>6</sup>	1.31 x 10 <sup>6</sup>
20% SiGe ON Si WITH GRADED BUFFER AFTER A 5 MIN ANNEAL AT 1050 °C	7.25 x 10 <sup>5</sup>	5.48 x 10 <sup>5</sup>

FIG. 5

+